

Bits of Bytes

Newsletter of the Pikes Peak Computer Application Society, Colorado Springs, CO

Volume XLII

January 2022

Issue 1

Meeting Minutes

by Greg Lenihan,
P*PCompAS Secretary

President John Pearce began the 4 December 2021 hybrid membership meeting at 9:00 am. David George provided coffee and John Pearce brought doughnuts. Coffee and doughnuts are free to first-time visitors and a \$1 donation is requested from members. A motion was made to approve the minutes from November and they were unanimously approved.

OFFICER REPORTS

Vice-President Cary Quinn said the presentation today was on Linux and that he would be working with Jeff Towne on new presentations.

Secretary/Newsletter Editor Greg Lenihan announced the next newsletter deadline as 18 December.

Treasurer Toni Logan stated we received 12 cents in interest last month. We have \$107.29 in checking, \$2931.81 in savings, for a total of \$3039.10. Toni discussed next year's budget, which is in the newsletter this month. A motion was made to approve the budget and it passed.

Membership Chair Ann Titus is taking dues (\$1) for next year. We currently have 23 members paid up for next year.

BOD Chair/Librarian Paul Godfrey had nothing to report.

APCUG Rep/Webmaster Joe Nuvolini reported he paid our APCUG membership dues for next year and has been reimbursed. Joe will pass on the new club officers to Judy Tylour (APCUG).

Next P*PCompAS meeting: Saturday, 8 January 2022 (2nd Sat)

Three mini-presentations are planned: Ventoy (a tool), updating to Win 11, and Udemu

OLD BUSINESS

John Pearce showed several options for getting better meeting audio out to the Zoom attendees. The purchase of a smaller sound board looked like the best option to use with wireless mics. John said the problem will carry over to our new president next year. One of the Zoom attendees announced that the sound was better at this meeting than in recent memory. John said one APCUG group passed a cellphone among the membership that had Zoom loaded on it to produce good sound for those on Zoom.

NEW BUSINESS

There were no nominations from the floor, so elections for new officers were held by proclamation. The results were Cary Quinn, President; Jeff Towne, Vice President; Toni Logan, Treasurer; Greg Lenihan, Secretary; John Pearce, BOD.

ANNOUNCEMENTS

The next social breakfast meeting will be Saturday, 18 December, at Perkins, starting at 8:00 am.

Our next membership meeting is Saturday, 8 January (the **second week**).

AROUND THE ROOM

Toni Logan was looking to buy a new computer and wanted to get opinions on Windows 11. She

can buy a computer on sale with Windows 10 and make sure it was upgradable. There are some bugs to be worked out yet on Win 11. Some people complain that their hard drives become encrypted. Windows 10 will be supported until 2025. Microsoft now only gives you 10 days to roll it back, instead of 30 days.

Joe Nuvolini reminded the club that Dave Hughes, a friend of the club, passed away. He had quite an impressive biography.

Gene Bagenstos believes that his router/modem is going bad. He is with CenturyLink, so needs a DSL modem. He can check out Best Buy or go online. He can try looking at CenturyLink's website and see what is approved or recommended.

Jeff Towne relayed to us that his wife is in hospice after getting Covid. Jeff is also having a bluescreen problem with an NDU. SYS message and he is working on

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Hospitality: Vacant

Programs: Jeff Towne

Publicity: Jeff Towne

Nominating: Vacant

Board of Directors

Ann Titus

Harvey McMinn

Jeff Towne

A.J. Whelan

John Pearce



John Pearce starting the 4 December 2022 hybrid meeting. A few Zoom attendees are seen in the background.

Proposed Budget for the Pikes Peak Computer Application Society for the year 2022

Incoming:		
Dues		\$ 20.00
Dividends		\$ 3.00
	Total	\$ 23.00
Outgoing:		
Church donation		\$300.00
APCUG Dues		\$ 50.00
Colorado Secretary of State fee		\$ 10.00
Volunteer Lunch		\$250.00
Software/hardware		\$100.00
Refreshments		\$ 50.00
	Total	\$760.00
Balance		\$737.00

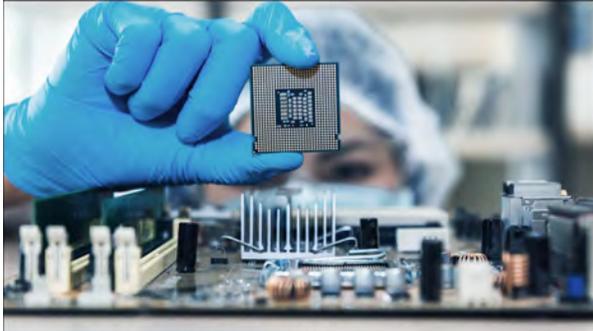
Prepared by Toni Logan, 11/17/21

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P*PCompAS welcomes any comments, letters, or articles from members and non-members alike. Please send any articles to the editor (see last page for address). The editor reserves the right to reject, postpone, or edit for space, style, grammar, and clarity of any material submitted.

What is Hyperthreading?

by Sydney Butler, reprinted with permission from [HowToGeek.com](https://www.howtogeek.com)
Original article at: <https://www.howtogeek.com/767751/what-is-hyperthreading/>



Hyperthreading was once a feature only found on [high-end professional CPUs](#). However, Hyperthreading is now found on mainstream consumer CPUs, too. So what exactly is Hyperthreading, and should you look for it in your next CPU?

What Is a Software Thread?

A software thread is a sequence of instructions that are processed by a CPU. It's the basic unit of programmed instructions managed by the *scheduler*. The scheduler is a component of the operating system that allocated hardware resources to the various types of software running on a computer.

Every application running on your computer exists as one or more processes. Threads are effectively segments of these processes sent to the CPU for execution. The scheduler rapidly assigns threads from different running programs to ensure that each gets the resources it needs to run in real-time.

This is how your computer can “multitask” and (for example) run a word processor while also playing music and downloading a video game in the background. Technically, a CPU core is not actually doing all these jobs at the same time.

So if your system just has a single-core CPU, it's rapidly juggling multiple sets of

instructions, switching so rapidly between them that to our slow human brains it all seems to happen in parallel.

True Parallel Processing in Home Computers

For most of personal computing history, your computer only had one CPU core in it. Well, back then we didn't talk about “cores” since there was just one and it was the whole CPU. However, in the mid-2000s CPU makers had the bright idea of stuffing two complete CPUs into one CPU package. These dual-core CPUs could actually process two threads of instructions at the same time. This meant that, for example, your video game could have 100% of a core and your operating system could have the other core all to itself.

Today CPU core counts are rapidly rising. Mainstream CPUs with [6, 8 and even 10 cores](#) are common. The high-end CPUs offer dozens of cores and CPUs like the AMD Threadripper 3990X are stuffed with a whopping 64 cores.

Software development has also changed to take better advantage of all this parallel CPU power. The latest video game consoles are equipped with eight CPU cores as well, so video games that can make use of that many cores are quickly becoming common.

Putting CPU Cores Into Overdrive With Hyperthreading

A traditional CPU can only handle a single thread, but if you have many different CPU cores in your system, you can handle a number of threads equal to the number of cores you have. This seems fine, but it presents one major issue.

Not all threads require the same amount of processing power. For example, a thread that's

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Meeting Minutes (Cont. from page 1)

the solution.

Ann Titus asked if anyone has used a wi-fi extender. Some had used Linksys, with good results. John Pearce said when it is time to upgrade her router, she should go to a mesh network.

Harvey McMinn showed a 1 TB SanDisk hard drive he purchased at Costco for \$110.

PRESENTATION

Our presenter, John Kennedy, had other commitments, so Cary

Quinn showed parts of two APCUG presentations by John Kennedy on Linux. One was “Getting and Installing Linux” (Workshop 2) and “Distros and Desktops” (Workshop 3). ☺

Forgot Your Windows 10 Password? Here's the Solution

By Bob Rankin, <http://askbobrankin.com>, published through the APCUG

You forgot your Windows 10 login password? Or maybe you 'inherited' a Windows 10 computer and you can't log in. There's hope, but resetting a forgotten password for a Windows 10 PC can be complicated by several factors. In this article, I'll show you how to create a Password Reset disk as a preventive measure, and also how to reset your password if you don't have the disk. Let's dig in...

Windows 10 Password Recovery - It's a Bit Complicated...

First, it matters whether you are trying to reset a local password that is stored on the PC in question or a Microsoft account password that is stored in the cloud. It also matters whether you need to reset an administrator account's password or a user account's password.

If, like many users, you created just one account when you set up Win 10 and use it day to day, then it is an administrator account. If you chose to log in with a Microsoft account during setup (or later), then you should use the



“forgot my password” procedure found on Microsoft Live's login page. Here is a direct link to the [password reset page](#).

If, as I have recommended for security purposes, you created a standard (local) user account and use it for all your day-to-day computing, then Microsoft's official word on the subject is this: “You're out of lucky, buddy.” Okay, I paraphrased. What they actually say is “If you forgot your local account password AND you don't have a Password Reset Disk, **you can't**

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Hyperthreading (Cont. from page 3)

rendering video will use 100% of a CPU core's available capacity, but the thread that's running your word processor or social media web page only needs a fraction of the power offered by a modern CPU core.

Likewise, a video game may have multiple threads that run in parallel, such as one that handles physics and another that handles character artificial intelligence. These are important jobs but may not need all of a single core to run well.

This leads to a situation where all of your CPU cores may be busy with threads, but aren't giving you all of the processing power they are capable of. That's where hyperthreading comes into the picture.

The proper generic name for hyperthreading is *simultaneous multithreading*. “Hyperthreading” is actually a proprietary marketing

name used by Intel, but just as with “Hoover,” it's become common parlance for the technology as a whole.

A CPU that's equipped with the right internal circuitry to enable hyperthreading can execute two separate threads at the same time. It's not switching between them as with traditional single-core multi-tasking. It's running each one in parallel.

To the operating system, it looks like each physical CPU core is actually two cores, which lets the scheduler assign two threads to each one. However, the total amount of processing power per core remains exactly the same.

Why You'd Want Hyperthreading

As we mentioned above, hyperthreading is mainly about making sure that you aren't leaving processing power on the table. Letting each core handle two

threads makes it easier for your operating system to get the most out of your hardware and avoids a situation where every core isn't running near or at full capacity. In the past, only professional software such as video editors or scientific data-crunching jobs really needed hyperthreading. Mainstream users hardly had enough apps running to need that many threads. Video games have also taken a long time to adopt the use of multiple threads, but now 8-core gaming systems are mainstream and the thread counts will keep rising.

As such, new mainstream CPUs now feature hyperthreading and it is a feature most users should want. However, if you get a good deal on an older CPU that doesn't have hyperthreading, it's not yet so essential that you can't afford to pass it up. ☺

Forgot Password (Cont. from page 4)

recover it. Instead, you'll need to reset your PC." Keep reading, though...

Creating a Password Reset Disk

If you're stuck in that unfortunate position (no password and no Password Reset Disk), it's too late to create a Password Reset Disk now. Skip down to "Resetting Your Windows 10 Password" if you need to do that now. If you want to create a Reset Disk, continue reading here.

Creating a Windows Password Reset Disk now is a good idea, if you are logged into your Windows account. The Reset Disk contains an encrypted backup of your password, and can be used to easily recover if you ever forget your password. Here's how to make one:

- Insert a USB flash drive
- Click the Start button, type **Control Panel** then press Enter
- On the Control Panel window, click "User Accounts"
- Click "Create a password reset disk".
- On the Forgotten Password Wizard, click Next.
- Select the USB drive that you inserted, then click Next.
- Enter your current account password and click Next.
- When the wizard finishes click Next, then Finish.

Label the flash drive as "Password Reset" (or maybe "Colonoscopy Report") and keep it in a safe place. Anyone who has access to this disk will be able to reset your password.

If the "Create a password reset disk" option does not appear on your User Accounts window, click the Windows button, type **Create a password reset disk**, and press Enter. You should see that option in the search results. If that still doesn't work, you're probably signed in with a Microsoft Account (not a local account) so this option does not apply.

Resetting Your Windows 10 Password

As I mentioned above, Microsoft will tell you to Reset your PC if you forgot your password, and you don't have a Password Reset Disk. **But that's not true, and they know it.**

Resetting your PC is a drastic step that will wipe out your programs, personal files, and settings. If you really want to do that, click the

Power icon at the bottom right of the login screen, then hold down the Shift key and click Restart. On the Boot options menu, select "Troubleshoot" then "Reset this PC" and then "Remove everything." Your computer will restart and re-install a fresh copy of Windows. After doing that, I suggest you follow my advice in the "Creating a Password Reset Disk" section above.

If you don't want to wipe and reset your computer, there's an unofficial trick which Microsoft has known about for years. The Windows 7 password reset method that I described in "[Resetting Forgotten Windows Password](#)" will work to reset the password for a local Windows 10 user account.

Briefly, that technique involves creating a System Repair Disc using another Windows 10 machine to which you have access. Booting from that disc, you will enter the command line and replace the file utilman.exe with cmd.exe, then remove the System Repair Disc and reboot. At the login screen, click the "accessibility features" icon and it will open a command prompt instead of utilman.exe. From the command line, you can reset a user account's password as described in the Win 7 article.

In fact, if you have a Win 7 System Repair Disc, it will work just fine for Windows 10 surgery, too. Everything described in this article was tested using a Win 7 System Repair Disc.

The one minor difference between Win 7 and Win 10 is that the "accessibility features" icon appears on the login screen's lower-left corner in Win 7 and the lower-right corner in Win 10. I've read that in some cases, the icon does not appear at all. If that happens, press WinKey+U (the Windows key and U at the same time).

What if you [eschewed](#) a Microsoft account and rely on a local password for an administrator account? You can create a new administrator account while you are at the command prompt. Just enter these commands, pressing Enter after each:

```
net user <username> /add
net localgroup administrators /add
```

Replace <username> with whatever name you wish to give to the new administrator account; do not include the < and >

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Tech 101: What To Do When Your Computer Freezes

by the Kim Komando at Komando.com (tip from 12/18/21)

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Pop quiz: How often do you need to restart your computer for best performance?

Here's a hint. If you only do it when your machine crashes or needs to update, that's not enough. [Tap or click for my recommendation for keeping your computer happy.](#)

It's frustrating to deal with a slow, lagging computer day in and day out. [Tap or click for six easy tactics to speed up an old PC.](#)

Sometimes the issues are more acute. If your computer is unresponsive, slow down and follow these steps.

Restart first

OK, this step is obvious, but there is often confusion here. Some people think they have to pull the computer's power plug or flip the switch on the power strip. Instead, hold the computer's power button for 5 to 10 seconds to power it off.

A few things can happen next when your computer comes back on.



1. Computer starts fine

If the computer starts up fine, don't just move on without second thought. This is an excellent reminder to back up your important information if a serious problem is on the way. Otherwise, you could find yourself scrambling through more complicated ways to get files off a dead computer.

Need help? [Here's what you need to know about backing up like a pro.](#)

If your computer does freeze again, keep reading.

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Forgot Password (Cont. from page 5)

characters.

Note that this new administrator account is created without assigning a password to it. So when you reboot (after removing the System Repair Disc!) you won't have to enter a password to access Windows 10 as an administrator. Just click the new username, which will appear in the lower-left corner of the splash screen that appears when Windows 10 loads.

Windows 10 will spend a few minutes setting up the desktop for this new administrator. When that's done, click on the Start button and scroll down the list of apps to the folder named "Windows Administrative Tools." Click on that folder and select "Computer Management."

In the folder tree on the left, click "Local Users and Groups" and then

"Users." In the middle pane of the window, highlight the username whose password you have forgotten and right-click. Then click on "Set password."

You will see a warning popup advising you that changing a user's password in this way might cause "loss of information." Or it might not, and who knows what information might be lost; Microsoft doesn't say. In my experiments, I lost nothing critical. I found I was logged out of Google Mail and some other sites, but it was easy enough to log into them again. All of my apps, settings, and data remained unchanged.

Once you have set a new password for the account in question, restart Windows 10 and log in with the account's username and new password. Now you're back in business!

It's a bad idea to leave unprotected administrator accounts

lying around. So go back to that "Users" folder in "Computer Management," highlight the unprotected account, and click the red X on the toolbar to delete it. You'll have to be logged in as an administrator to do this, of course.

It's optional to restore utilman.exe to its original function; instructions are in the Windows 7 articles linked above. I advise you to do so, because leaving that link to cmd.exe on the login screen allows anyone access to the command line; as you have seen, that can give savvy persons access to your Windows account.

For completeness, I'll mention there is a program called [PC Unlocker](#) that can simplify the above process of resetting a Windows password. It's not free (US \$29.99) and I've not tried it myself, but it does have good reviews. So that's another option. ☺

*Computer Freeze (Cont. from page 6)***2. Computer asks you how to boot**

While restarting, the computer might indicate an error with Windows and ask if you want to start normally or in Safe Mode. Choose to start Windows normally. Then back up your data and see if it freezes again.

If Windows fails to boot normally three times in a row, it will enter Automatic Repair Mode. Here you can boot into Safe Mode. To do so, interrupt the boot-up process. Before Windows finishes loading, press down on the power button for four seconds to interrupt the process.

If this is the second time your computer has frozen, choose to boot in “Safe Mode with Networking.” Try using the computer like this and see if it freezes again.

If it doesn't freeze in Safe Mode, it's likely a software problem.

3. Computer freezes again immediately

If the computer freezes again immediately after booting, whether in normal mode or Safe Mode, you could have a serious software or hardware problem. It's most likely a hardware problem, though.

4. Your computer is checking the disk

There could be corrupt data on your hard drive, and the computer is trying to repair that data. If so, it will start with a check disk. You mustn't interrupt this process, or you risk further data loss.

The process can take anywhere from 5 minutes to half a day, depending on how far gone the drive is, and you'll see a percentage counter on your screen. If your drive has failed completely, you'll need to do a clean install of Windows and replace the disk.

Basic troubleshooting steps

An occasional or consistent computer freeze could result from a program acting up. Use the keyboard shortcut **Ctrl + Shift + ESC** to open Windows Task Manager. Select the “**Performance**” tab. You might need to click the “**More Details**” link at the bottom of the Task Manager to see everything running and if a program uses excessive resources.

Start using your computer as usual, but keep an eye on the CPU, memory, and disk categories. If the computer freezes and one of these is really high, that could be your answer. Make a note of which area was high, then restart the computer and open Task Manager again.

This time, choose the “**Processes**” tab. Sort the list by CPU, memory, or disk, whichever was high the last time the computer froze, and see what process pops up to the top of the list as the computer freezes. This should tell you what software is giving up trouble so you can uninstall or update it.

You might also have hidden software, such as a virus, causing problems. Run a scan with your security software to uncover something that shouldn't be there. [Tap or click for free tools to check if your machine is infected with a virus.](#)

In cases where your computer freezes during startup in normal mode but boots OK in Safe Mode, the problem could be a program that's loading during the boot sequence. [Tap or click here to make your startup process cleaner.](#)

If your computer is freezing during startup no matter what, and it's at the same point, the problem could be corruption in Windows or a hardware problem. [Tap or click for steps to restore a clean version of Windows on your PC.](#)

What if it's the hardware

On the hardware side, start with your peripherals. Unplug everything but your monitor and keyboard and see if the computer starts up. One by one, you can add your accessories back in to see if any triggers an issue.

The problem could also be with your hard drive, an overheating CPU, bad memory, or a failing power supply. It might also be your motherboard, although that's rare.

Usually, with a hardware problem, freezing will start sporadic but increase in frequency as time goes on. Or it will trigger when the computer is working hard, but not when you're doing more basic things.

There are free sites that can tell if you have a failing hard drive. [Tap or click for six ways to check for a failing hard drive.](#)

You should also check the temperature of your machine. A program like [SpeedFan](#) can tell you if your computer processor is overheating or fluctuating voltages, which might be a problematic power supply.

If these DIY fixes don't help and your machine is still failing, it might be time to start shopping. If your computer is newer, it might still be under warranty. Contact the manufacturer or seller to check. ☺

Understanding Internet Speed

by Joe Callison, Seniors Computer Club of Greater Kansas City, <https://kcsenior.net>, [sencommember00 \(at\) gmail.com](mailto:sencommember00@gmail.com)

How fast is my internet connection? Am I getting what I am paying for? These are typical concerns for consumers, especially if they think their internet connection is too slow. We will look at this from the top-down, starting with the service from the internet provider to the residence or business, then the modem/router that provides the local network over wire and Wi-Fi, and finally the adapters in the computing devices connected to the local network.

Internet service is provided under language like "speeds up to" many megabits per second (Mbps). This is the maximum speed that will be delivered with the lightest load on the providers' distribution system. Suppose many consumers happen to be streaming movies simultaneously on the same network branch that you are connected to. In that case, you may only experience 80 or 90 percent of the maximum speed. This possibility should be considered before you decide on what speed of service you need. Do you know what speed you need? I doubt that most people do. Let's look at some of the requirements.

Netflix recommends 3 Mbps for standard quality video (SD), 5 Mbps for high-definition video (HD), and 25 Mbps for ultra high definition video (UHD). Hulu recommends 3 Mbps for content from their streaming library, 8 Mbps for live streaming, and 16 Mbps for 4K content. Remember that if you have two people in the household or business who may be streaming videos simultaneously, these requirements will double, and four people would quadruple. To ensure that you always receive at least these speeds from your provider, you should increase the total simultaneous requirements by 25%. Suppose you don't stream high-definition movies (or games) over the internet at all. In that case, you can use a rule of thumb of 5 Mbps for each simultaneous connection to the internet, which is plenty adequate for email, internet browsing, standard quality video or video conferencing, and such.

The modem/router which may be leased from your internet service provider or provided by you must be capable of handling the total simultaneous network requirements, in addition to providing each connected device with its needed speed. Old "G" routers (802.11g) generally have either 10 or 100 Mbps for each wired connection and a maximum of 54 Mbps for Wi-Fi connections. The

Wi-Fi speed will drop off dramatically as the distance from the router increases.

The "N" routers may have a single 2.4 GHz radio like the "G" routers or may have both a 2.4 GHz and a 5 GHz radio (dual band). The single band generally provides up to 300 Mbps, and the dual band up to 600 Mbps (total for both bands). The wired connections maybe 100 or 1000 Mbps. Newer "AC" routers are all dual-band and are often identified by a total combined Wi-Fi speed such as AC1200 for one with a 300 Mbps 2.4 GHz radio and 900 Mbps for a 5 GHz radio, or AC1900 for one with a 600 Mbps 2.4 GHz radio and 1300 Mbps for a 5 GHz radio. Wired ports are generally rated for 1000 Mbps.

A modem and or router may have a total bandwidth limitation that is less than the sum of the ratings of all individual connections. In other words, a router with four wired ports rated 1000 Mbps each may only be capable of delivering a fraction of that if all ports are active simultaneously. Unfortunately, the bandwidth rating is often a very difficult specification number to find.

The wired Ethernet adapter or Wi-Fi adapter in your computer or other internet-connected devices may also be a G, N, or AC capable type with its own specifications for speed. For the last several years, computers have included wired adapters rated 1000 Mbps. The ratings for Wi-Fi adapters vary greatly, as does their antenna's capability to send and receive signals over distance. For example, the 5 GHz adapter in the laptop I am using connects to the router at 390 Mbps at a distance of about 20 feet. An external USB 3.0 Wi-Fi adapter I recently tested connects at over 700 Mbps from the same distance. For those with 1000 Mbps internet service, the Ethernet cable used for wired connections can limit achievable speeds. It will generally be necessary for cables over a few feet in length to use CAT 5e or CAT 6 cables to obtain maximum speeds.

Ultimately, the most interesting number is the speed we can actually get at our computer or device. The speedtest.net site is often used to test the speed between your device and a selected server on the internet. For the most

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Linux as an Alternative Operating System

by Joe Callison, Seniors Computer Club of Greater Kansas City, <https://kcsenior.net>, [sencommember00 \(at\) gmail.com](mailto:sencommember00@gmail.com)

Computer hobbyists looking for a free or low-cost alternative to Microsoft Windows or Apple macOS operating systems have turned to Linux for decades. Because of its reliability, modest hardware resource requirements, and low cost, it is now widely used for embedded operating systems for smart devices and a large percentage of computer servers powering companies and the internet. In recent years, organizations such as Ubuntu have made improvements in the distribution process more accessible to even those with modest computer skills by using bootable “live” CD or USB downloads that let you try it out without installing on the computer unless you choose to do so. Of course, the performance will be much faster when installed rather than running from the CD or USB files.

CAUTION: Choosing to install Linux on a computer will reformat and overwrite your existing files and operating system unless you do it properly to allow dual-booting Linux with your existing operating system! If you are unsure about the process, get help!

Great improvements in the available graphical user interfaces have made Linux very user-friendly for existing Windows and macOS users, with some user interfaces even mimicking much of the look and feel of those operating systems.

What is Linux?

<https://www.linux.com/what-is-linux/>

History of Linux

https://en.wikipedia.org/wiki/History_of_Linux

Linux Distributions

<https://distrowatch.com/>

Some of the Best Distributions for Windows (or macOS) Users in 2021

<https://www.fossmint.com/linux-distribution-for-windows-users/>

Some of the Best Distributions for Beginners, Mainstream and Advanced Users in 2021

<https://www.techradar.com/best/best-linux-distros>

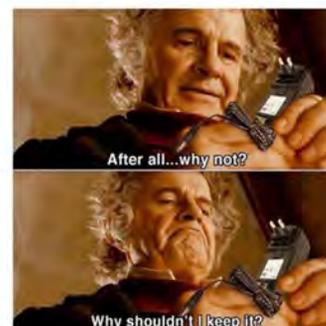
Linux is a great choice for those wanting to continue using an older desktop or laptop computer that does not have the resources to run the latest operating system version from Microsoft or do so satisfactorily or use it as a Linux computer to explore its capabilities.

One of the benefits of Linux is the huge availability of free quality software to try out. You may be familiar with some of the most popular

ones that have also been available for Windows users, such as LibreOffice (Microsoft Office alternative), GIMP (photo editor), Audacity (music editor), VLC (media player), and many others.

SenCom’s membership in APCUG (<https://apcug2.org/>) gives you free access to workshops on Linux topics and the Penguin Platform blog for more resources for Linux users. ☺

Dads: *considering whether to throw away old cables*



Internet Speed (Cont. from page 8)

accurate test, other background tasks that could be connecting to the internet should be temporarily halted. Also, note that the site recommends using their app for

testing connections rated 100 Mbps or more instead of the browser version. I have tested both ways on my 1000 Mbps capable internet service, and the browser version showed 394 Mbps compared to over 900 Mbps with the app.

Real-world connections can be much slower than the test speeds because of the load on the servers for a particular website you are connecting to. Using a VPN service also generally results in slower speeds. ☺

P*PCompAS Newsletter
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Coming Events:

Next Membership Meeting: 8 January beginning at 9 am (see directions below)

Next Breakfast Meeting: 15 January @ 8:00 am, Perkins, 3295 E. Platte Ave.

Newsletter Deadline: 22 January

Check out our Web page at: <http://ppcompas.apcug.org>

